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## **Somebody Knockin': The Public Library at the Electronic Door**

### **ABSTRACT**

A suburban public library with a long history of technological innovation chronicles its adventures during its first year of Internet connectivity, including staff use of electronic mail, TELNET, and File Transfer Protocol (FTP). Future plans include public use from the computer lab located in the library. A resource section includes information on how to get on the Internet and how to learn more about it through user guides.

### **COMPUTER USE AT THE LIVERPOOL PUBLIC LIBRARY**

The Liverpool Public Library, in central New York State, has a long history of computer use for both staff and patrons. In October 1991, we celebrated ten years of public computing. What had begun in 1981 with a 48K Apple II+ has grown into a multimedia lab/playground with seven computers and related peripherals. Over 1,400 hours per month are reserved on two Macintosh LC's, a Macintosh SE, an Apple IIGS, an Apple IIe, or an IBM compatible. Clients tinker with their résumés and learn how to use application software like word

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processors, databases, and spreadsheets. Home-schooled students use the computers for drill and practice. Churches produce newsletters; clubs produce mailing labels.

The seventh system is called the Emerging Technologies Workstation. It is a color Macintosh IIfx with attached videodisk and CD-ROM players as well as an audio mixer and headphones. This equipment was part of an Apple Library of Tomorrow grant, which the library received in 1990. Currently, we are beta-testing the Library of Congress's American Memory Project interactive videodisks, but more on that later.

About a year ago, our mid-level regional network, NYSErNet, Inc., approached us with a deal that we could not refuse. We accepted a grant from them and became the nation's smallest public library with Internet connectivity. NYSErNet, Inc., is an unusual nonprofit corporation "whose mission is to advance science, education, and research through the interchange of information via computer networks." Affiliates include over 40 academic sites, libraries, nonprofit organizations, and research and government facilities. Their goal is New York Statewide connectivity for everyone. NYSErNet is aggressively bringing new users to the Internet. Recently, a number of sites have come online due to their New Connections grant program. Besides our library, others include the American Museum of Natural History, the Russell Sage Foundation, the New York Public Library, and various K-12 sites.

Under our grant, NYSErNet subsidizes network costs for a trial period of varying lengths. The site must provide its own phone line, 9600-baud modem, and computer (MS-DOS compatible, Macintosh, or Sun system). At the end of the grant period, we can elect to keep the software and pay for our connection, which at this time is about \$200 per month.

Sometime during 1992, we hope to offer Internet access to lab clients. It is unclear at this time what form this access will take. Will users have "accounts" and private mailboxes so that they can exchange electronic mail (e-mail) and subscribe to listservs and newsgroups? Or will the front-end be just a screen or two of a "Top Ten" list of interesting places to telnet to?

We also have developed a proposal to provide a "Free-Net-type" dial-in system that would allow up to 64 concurrent sessions via a standard, dedicated Internet connection. The Cleveland Free-Net, described later in this paper, is a wonderful pilot, but it operates under the UNIX operating system. We think that most small libraries will not have a UNIX box nor a UNIX wizard on-site, so we propose to develop this project under the Macintosh operating system. Not that we think most public libraries are able to afford a standard connection

and a support staff like ours, either, but we hope to pave the way and show what can be done with these resources.

We think that ALL librarians need access to e-mail right away. They can get this connectivity with a minimum of equipment: a computer, phone line, communications software, and low-speed modem. Average costs are about \$20 per month for e-mail only.

### LOCAL ELECTRONIC MAIL

Our site uses QuickMail (CE Software) as its in-house mailer. Most full-time staff members have e-mail addresses on our system. They can log in to these mailboxes from any computer on our local area network (LAN). Mail is stored on a server located in the Computer Department. When someone logs in, the server is checked for mail addressed to that person. New mail may be read, stored, forwarded, printed, or deleted. Users can compose new mail and easily send it to individuals, or "groups" of individuals may be set up under one address, like "all Department Heads."

Mail can be carbon copied to others as well as blind carbon copied—meaning the main recipient does not know you have also copied others. Mail can even be "unsent" if it has not been read by the addressee. This function is useful if you change your mind about sending that nasty note!

E-mail has many benefits, although there are drawbacks, too. Some of the good things:

- Saves paper, although not if you print out every message. Most users do not do this, instead storing messages electronically on their computers.
- Improves communication among those on different work schedules and in different work groups. It is time efficient to send an electronic message to many people rather than making one memo, using a photocopier to make many copies, then physically distributing all the copies.
- Avoids face-to-face confrontation. Sometimes this is also more time efficient since meeting with someone to communicate one message may lead to more conversation about other issues, which time management may not allow.

One of the negative things about e-mail is that it allows users to avoid face-to-face confrontation. Everyone likes to distance themselves from conflict, and e-mail is just one more way to do it. Our system even lets you write a memo and time it to be sent after you have left the building and are safely 10 miles away!

Reprimands via e-mail are never a good idea, and many of us have a reminder note taped to our monitors that says "bad news should be delivered only in person."

## USE OF THE QUICKMAIL-TO-INTERNET GATEWAY

We have had e-mail throughout our building for many years, and everyone is used to the easily understood interface. Once connected to the Internet, we feared that its users would need to learn another mailer. Fortunately, we use a combination of products that allows our Internet mail to appear in our QuickMail mailboxes alongside our in-house library mail.

QuickMail Administrator runs all traffic through the various mailcenters we have set up. QM Admin takes care of where the mail is, who it is addressed to, who has read what, what has been deleted, etc.

One mailcenter is called Internet. Anything sent to this mailcenter is handled by a third-party product called UMCP QuickMail. This software "gateway" has been configured to grab the 9600-baud modem and a standard phone line every 30 minutes and call out to the local PSI (Performance Systems International) POP (point of presence).

From there it hops to a UUCP (UNIX-to-UNIX Copy Program) mail server located Out There, exchanges mail from and to addresses at lpl.org (our Internet domain name), and logs off.

UMCP QuickMail then releases the line and resets the modem. It goes through all mail received and re-sorts it into the local mailboxes of our users. QuickMail Remote lets our users call in from their home systems and send and receive mail just as they would do at their desks on-site. Our only problem with this is speed—it is much faster at work than at home, and only one person at a time can log on from a remote location.

Readers used to academic computing centers and many incoming lines and modem ports will scoff at the "paper clip and baling twine" method of getting Internet mail to our public library clients—but on the other hand, it's cheap and it works.

## TELNET AND FTP

QuickMail will not help us if we want to connect to a remote computer and use its resources using TELNET or if we want to acquire files or software using anonymous File Transfer Protocol (FTP). For that we use Intercon's TCP Connect II. Its graphical user interface



is a big step toward making Internet use much less arcane. This program allows us to call the local POP and initiate a SLIP (Serial Line Internet Protocol) connection to the fast network backbone.

Most academic and research sites have a dedicated connection to the Internet and a static numeric address. Our SLIP connection gives us a dynamic address—it changes depending on what modem we have hit on the way in. Once we have been given our address for that particular session, we become what amounts to any other “host” computer on the Internet—but only for as long as we stay connected. Once we log off, we are truly gone, known only to the domain name servers Out There in dataspace.

TCP Connect II's TELNET and FTP tools are easy to use and support the Macintosh interface. But we do not think they are easy enough for the public to use. Getting the assigned dynamic IP (Internet protocol) number slid into the right place is something we do not feel clients in our lab should have to do. We want a macro to log on, get the IP, put it where it needs to go, and then ask what the client wants to do. We have not been able to do this using this product. Many other telecommunications programs allow creation of scripts like this, but none of them works using a SLIP connection—so far. Or if they do support SLIP, they must run under Ethernet at your site—and we are running only PhoneNet/LocalTalk at this point. Remember, I said this was a cheap solution! Nothing is easy on the frontier of telecommunications. . . .

## WHAT WE HAVE BEEN DOING WITH OUR INTERNET CONNECTION

In the past year, we have “subscribed” many employees to various discussion groups. Most of these are job related, such as PACS-L (Public-Access Computer Systems) or LIBADMIN (Library Administration), although we do have some “fun” subscriptions such as DOROTHY-L (for mystery readers) and BIRD.EAST, which is the Audubon hotline for announcements of unusual bird sightings. Recently, after receiving one of these hotline reports, we all piled into the van to inspect a rare arctic visitor: a hawk owl who had settled on a tree about 30 miles from the library.

We are disseminating some of this Internet wealth in print form to our library patrons. Our Mystery Readers Club in particular enjoys the information they get from DOROTHY-L. Audubon sightings have been distributed to the local Audubon Club, birdseed boutiques, and other interested birders.

It is estimated that there are now over 12,000 moderated lists/discussion groups on the Internet. The figure does not count the many unmoderated lists available. Lists exist on everything from Arthurian legend to origami. It is true that a good percentage of the communication on these lists amounts to so much "line noise"—that is, unnecessary use of bandwidth, personal flames (tirades), and other distractions. However, MUCH of the information exchanged is solid and useful to our lives as professionals as well as helping us achieve personal growth.

No more are we an isolated, small public library hardly looking beyond our own service area borders. Now we are discussing quality circles, coping with shrinking budgets, and personnel issues with our counterparts all over the world.

We compare notes on computer hardware and software and are able to get personal recommendations of products from real users rather than relying on vendor hype and reviews, if we can find them. We are expressing our views on public library on-ramps to the National Research and Education Network (NREN) and policies that will affect our patrons' use of new technologies. Telecommunicating through the Internet has helped us level the playing field for discussions with government officials, network providers, policy makers, and other users. Now that we have got Internet connectivity, we do not remember life without it.

### NYSERNET AND THE NEW YORK STATE LIBRARY

Of course now we want all the other libraries in New York State to have what we have. There is hope. In 1989, the New York Statewide Automation Committee released a report on the telecommunications future of New York State's 7,000 libraries. It proposed the idea of the "Electronic Doorway" through which even the smallest and most remote libraries could access the resources of other libraries around the state.

The New York State Library is the largest state library in the nation, with over 5.5 million items in its collection. In 1992, it will join NYSERNet and make its online public access catalog (OPAC) available to Internet researchers.

The State Library and NYSERNet will collaborate on a joint initiative to begin implementation of the Electronic Doorway concept. They will investigate possibilities for staging a replacement of the New York State interlibrary loan system (NYSILL) and deployment of a statewide e-mail system among libraries and library systems.

Although there are some small New York libraries currently without even telephones, let alone computers, we support this initiative. Herbert

S. White says that the poorer and more remote a library is, the more it needs technology.

Recently, wireless communications technology has taken off, and we see demonstrations of the following:

- wireless LocalTalk networks;
- the wireless equivalent of T1 network speed over a line-of-sight distance of three miles;
- products such as the Mobidem modem, which provides two-way packet radio Internet connectivity;
- products such as the HP 95-LX palmtop computer and the Motorola Newstream pager (dial 1-800-Skyword with your modem, address a friend's personal ID number, and send a message directly to the computer in his backpack; it uses satellites and magic to deliver your instantaneous thoughts for about \$40 a month).

All this means is that we will not continue to be dependent on wired, land-based telecommunications infrastructures. This is of particular interest to rural libraries.

### MULTIMEDIA ON THE NET?

The Library of Congress's American Memory Project is currently in beta-test at 37 libraries around the United States. Our library is one of the handful of public libraries using it. It is available for use in our public computer lab.

The project brings primary source material "out of the archives and into the streets." In its latest incarnation, it includes three videodisks of material including the following:

- 25,000 postcards of turn-of-the-century American landmarks from the Detroit Publishing Company;
- Nation's Forum audio archives of political speeches and portraits of the speakers;
- films of the building of New York City, boat tours of the harbors, films of the 1901 Pan-American Exposition in Buffalo, New York;
- 18th century broadsides;
- political cartoons.

Eventually, the Library of Congress hopes to make resource material like this available over the NREN. We think their graphic interface is particularly easy to use.

Interesting uses of telecommunications technology were demonstrated at the March National NET'92 Conference in Washington, DC, including packet video. Conference goers saw and spoke to a

researcher in North Carolina, who appeared on a color computer screen. The quality was excellent although it works best for "talking heads" teleconferencing and not for full-motion. The video was coming over the Internet, not being broadcast from a satellite.

### WHAT USERS NEED

As cheap connectivity and hardware become more ubiquitous in homes and as video dial tones and ISDN (Integrated Services Digital Network) proliferate, will the public library survive? Many copyright-free electronic texts can be downloaded from Project Gutenberg now (get to it via Gophers); some journals now exist in electronic-only editions; publishing books on demand, tailored to the reader's interests, is now a reality. Brian Kahin's new book *Building Information Infrastructure*, published under the Primis imprint by McGraw-Hill, is one of these. Kahin writes, "the chapters can be printed individually or in combination with any other material in the Primis database to create custom textbooks . . . we wanted a Protean publication whose many parts could be assembled and reassembled to fit the interests of many readers" (pp. 3-4).

Users can even telnet to the Stanford University Bookstore (via MELVYL, telnet 31.1.0.11 or telnet melvyl) and electronically peruse the wares. Rumor has it that students at least will soon be able to purchase their books online using a credit card. Although the Rest of Us cannot order books via Internet, we can call the bookstore during normal business hours and place an order (order desk phone: (800) 533-2670, fax: (415) 322-1936).

If library users can do all this from home, will public librarians still have jobs? The answer is yes as long as the Internet remains difficult to use.

Although interfaces are becoming easier, many people prefer to simply ask a human. In our computer lab, we note that people will not read a simple one-paragraph "start-up instructions" note posted at the computer workstation. They much prefer help from another person.

We wonder how automatic teller machines (ATMs) have impacted bank business. Have they lessened traffic through the line inside? Will we see less telephone and walk-up reference as people are empowered to search with Gophers and archies and whatnot from home? Or will we simply see our emphasis shift from a focus less on a facility-based collection to more of an individualized client-based "collection" spread over host computers on many continents? Will we see publicly funded "911 for Information" network information centers, operated around the clock, staffed by librarians who know where the Internet goods are and who's got 'em?

And do we as a profession have the Right Stuff? How do we avoid being caught in traditional library backwaters so we can emerge as



librarians surfing the Internet? Training! Training! Training! Get e-mail as fast as you can even if you have to pay for it personally. Join some discussion groups even if you just absorb what others are saying. Get involved somewhere and gopher it!

For more information, contact The WORLD, Software Tool & Die, 1330 Beacon Street, Brookline, MA 02146; phone: (617) 739-0202.

### AlterNet . . . "IP Networking for the Rest of Us"

Another twist on low-cost networking is AlterNet. They also lease equipment like routers and modems and will preconfigure "plug and play" hardware solutions for you. They will also deal with getting 56k, T1, or T3 lines run to your site. AlterNet Domestic Service Charges follow (effective 9/13/91):

Type	Monthly Rate	Startup Charge
T1	\$2,000	\$5,000
T1-LV (Low Volume)	\$1,000	\$5,000
56k DDS	\$1,000	\$2,000
Subrate DDS	\$ 500	\$2,000 (19.2k/9.6k)
Async SLIP/PPP	\$ 250	\$1,500 (V.32 or V.32bis)

For more information, contact UUNET Technologies, Inc., 3110 Fairview Park Drive, Suite 570, Falls Church, VA 22042; phone: (800) 4UUNET3, (703) 876-5050; fax: (703) 876-5059; Internet: [alternet-info@uunet.uu.net](mailto:alternet-info@uunet.uu.net).

### Netcom

If you are in the San Francisco Bay area, check these folks for connectivity. They provide a complete dial-up and communication service including netnews, e-mail, Internet access, and general computing services. They anticipate expansion of their network to southern California (Los Angeles) and Sacramento by early 1992. Personal accounts are based on a fixed monthly fee without any hourly or connect charges. There are two different pricing schedules: personal account (invoiced monthly), \$19.50/month or personal account (auto-billing) \$17.50/month. Standard connections and business connections have varying rates. For more information, (408) 554-UNIX; Internet: [info@netcom.com](mailto:info@netcom.com).

## APPENDIX B

### RESOURCES FOR LEARNING MORE

#### Computer Systems Policy Project

At the March 1992 National NET'92 Conference in Washington, DC, a representative of the Computer Systems Policy Project provided a broader vision of what the NREN could accomplish. An illuminating videotape spotlighted innovative services and health care for seniors, improved education and lifelong learning opportunities, advances in industrial design and manufacturing, as well as broad access to libraries, databases, and e-mail. Copies of the full report, along with the video, are available for \$20 from the Computer Systems Policy Project, 1735 New York Avenue, NW, Suite 500, Washington, DC 20006; phone: (202) 628-1700.

#### Emily Postnews Answers Your Questions on Netiquette

Brad Templeton's ([brad@looking.on.ca](mailto:brad@looking.on.ca)) piece on how NOT to behave on the net, Emily Postnews is the foremost authority on proper net behavior, giving satirical and hilarious advice. To ftp the most recent update, enter [pit-manager.mit.edu](http://pit-manager.mit.edu). Here is a sample:

Dear Miss Postnews: How long should my signature be?—[verbose@noisy](mailto:verbose@noisy)  
A: Dear Verbose: Please try and make your signature as long as you can. It's much more important than your article, of course, so try to have more lines of signature than actual text. Try to include a large graphic made of ASCII characters, plus lots of cute quotes and slogans. People will never tire of reading these pearls of wisdom again and again, and you will soon become personally associated with the joy each reader feels at seeing yet another delightful repeat of your signature. Be sure as well to include a complete map of USENET with each signature, to show how anybody can get mail to you from any site in the world. Be sure to include Internet gateways as well. Also tell people on your own site how to mail to you. Give independent addresses for Internet, UUCP, and BITNET, even if they are all the same.

#### Hitchhiker's Guide to the Internet

As many Network Information Centers are doing, the CERFnet NIC stores many Internet guides and RFCs (requests for comments), including the famous, if technical, *Hitchhiker's Guide to the Internet*. These may be obtained via anonymous FTP to [nic.cerf.net](ftp://nic.cerf.net) (192.102.249.3). Call the CERFnet Hotline at (800) 876-CERF for assistance. Ask for their Captain Internet and CERFBoy comic, too. For more information, contact California Education and Research Federation, c/o San Diego Supercomputer Center, P.O. Box 85608, San Diego, CA 92186-9784; e-mail: [help@cerf.net](mailto:help@cerf.net); phone: (800) 876-CERF or (619) 534-5087.

#### Library Resources on the Internet: Strategies for Selection and Use

RASD Occasional Paper no. 12, published in 1992, sells for \$18 for members, \$20 for nonmembers. It can be ordered from ALA Order Services, 50 E. Huron,

Chicago, IL 60611, (800) 545-2433. Electronic versions are available via FTP: ASCII file from host dla.ucop.edu, directory pub/internet, filename libcat-guide; host ftp.unt.edu, directory library; filename libcat-guide. WordPerfect 5.1 file from host hydra.uwo.ca, directory libsoft; filename internet.com.

## Mining the Internet

There is a guidebook called *Mining the Internet* available from the University of California at Davis. Here is how the Gold Country Mining Instructions begin:

Jist durn tuckered o' workin' eight t' five for a salary. ain't you? An' you wanna set out for parts unknown. You're hankerin' for an a'venture. Come'n then go 'Mining the Internet' with me, father of Clementine (that's my darlin'), and I'll tell you some old timey tales and introduce you to a new resource for students, faculty, and staff called wide area networking. . . . 'Taint goin' to hurt you any, and the prospect looks good for a lucky strike.

*Mining the Internet* and *Using the Internet A&B* are available from Computing Services, University of California, Davis, CA 95616-8563; phone: (916) 752-0233; or electronically by anonymous FTP from ucdavis.edu (128.120.2.1) directory ucd.netdocs/mining.

## New User's Guide to Unique and Interesting Resources on the Internet 2.0

Available from NYSErNet (New York State Education and Research Network), it is over 145 pages and lists some 50 sources—OPACs, databases, information resources, and more. May be obtained electronically by anonymous FTP from nysernet.org directory /pub/resources/guides. The cost is \$25 or \$18 for NYSErNet members.

## Beyond the Walls: Networked Information Kit

Linda Carl of NYSErNet describes this as "an excellent introduction to the possibilities of 'The World of Networked Information'. This instructional package, of use in presenting the possibilities and benefits of electronic networking to groups, consists of a videotape and an instructional notebook package." The cost is \$99 (price includes postage and handling) and \$49 for NYSErNet affiliates. Send a check (made out to NYSErNet) or purchase order. Send with your name, U.S. mail address, and phone number to NYSErNet New User's Guide, NYSErNet, Inc., 200 Elwood Davis Rd., Suite 103, Liverpool, NY 13088-6147; phone: (315) 453-2912; e-mail: info@nysernet.org.

## NorthWestNet User Services Internet Resource Guide

NorthWestNet offers a 300-page guide to the Internet, covering e-mail, file transfer, remote login, discussion groups, online library catalogs, and supercomputer access. Copies may be purchased for \$20 from NorthWestNet. NorthWestNet, 15400 SE 30th Place, Suite 202, Bellevue, WA 98007; phone: (206) 562-3000; fax: (206) 562-4822.



## **NSF Internet Tour HyperCard Stack**

This guide includes net history, net maps, and net poetry and lore and is free. The NSF Service Center also publishes a very complete *Internet Resource Guide* (\$15). Many items, including the HyperCard Tour to the Internet, are freely available by anonymous FTP from nnsc.nsf.net. For more information, contact NSF Network Service Center (NNSC), Bolt Beranek and Newman Inc., 10 Moulton Street, Cambridge, MA 02138; phone: (617) 873-3400; e-mail: nnsc@nnsc.nsf.net.

## **Special Internet Connections**

Compiled by Scott Yanoff, this indispensable list of network resources is available using TELNET and FTP and is updated weekly. It includes a few OPACs, chat lines, weatherservers, campuswide information systems, and reference resources. Send e-mail to the list manager (Scott Yanoff) at yanoff@csd4.csd.uwm.edu or FTP to csd4.csd.uwm.edu, and the filename is inet-services.

## **There's Gold in Them Thar Networks! or Searching for Treasure in all the Wrong Places**

Written by Jerry Martin at Ohio State University, this document is available via Internet message to infoserver@nnsc.nsf.net. Once inside the message area, give the following commands to retrieve the document:

```
REQUEST: NSFNET  
TOPIC: NETWORK-TREASURES  
REQUEST: END
```

## **Zen and the Art of the Internet**

This guide is the BEST and unfortunately hardest to get unless you are connected. This will be published in book form sometime in spring/summer 1992. Contact the author, Brendan Kehoe, Sun Network Manager, Widener University, Chester, PA; e-mail: brendan@cs.widener.edu. Electronic editions at ftp.uu.net (137.39.1.9) in /inet/doc; ftp.cs.toronto.edu (128.100.3.6) in pub/zen; ftp.cs.widener.edu (147.31.254.132) in pub/zen as zen-1.0.tar.Z, zen-1.0.dvi, and zen-1.0.PS; ftp.sura.net (128.167.254.179) in pub/nic as zen-1.0.PS. If you are limited to UUCP, you can get it anonymously by dialing UUNET at 900-GOT-SRCS and get the file /inet/doc/FILES.

## **A Cruise of the Internet**

This guide is a new, free Internet HyperCard stack from Merit. Merit is also a treasure trove of Internet information and resources, including Internet use statistics. For more information, contact Merit Network, Inc., 2901 Hubbard Ave., Ann Arbor, MI 48109-2016; phone: (313) 936-3000; e-mail: nsfnet-info@merit.edu.

## APPENDIX C

### INTERNET RESOURCES

Besides our use of discussion lists, we have been exploring resources available for TELNET and FTP visits, with an eye toward their usefulness to public library audiences. Here are some of the ones we like.

#### **Cleveland Free-Net**

Free-Nets are the brainchild of Tom Grundner, Director, Community Telecomputing Laboratory, Case Western Reserve University, 303 Wickenden Building, Cleveland, OH 44106; phone: (216) 368-2733; fax: (216) 368-5436; Internet: aa001@cleveland.freenet.edu; BITNET: aa001%cleveland.freenet.edu@cunyv; and the folks at National Public Telecomputing Network (NPTN), Box 1987, Cleveland, OH 44106; phone: (216) 368-2733; fax: (216) 368-5436; e-mail: aa622@cleveland.freenet.edu.

Free-Nets use a city metaphor, complete with schools, hospitals (for people AND pets), the Cleveland Public Library, the courthouse, and other public services. Free-Nets also provide weather, news, and gateways to other resources, including other Free-Nets. To access the Cleveland Free-Net, simply telnet to freenet-in-a.cwru.edu 129.22.8.82 or 129.22.8.75 or 129.22.8.76 or 129.22.8.44 and select "visitor" at the login menu.

#### **MELVYL**

MELVYL includes the union catalog of monographs and serials held by the nine University of California (UC) campuses and affiliated libraries. It represents nearly 11 million holdings at UC, the California State Library, and the Center for Research Libraries. The MELVYL catalog also provides access to MEDLINE and Current Contents as well as a gateway to many other systems. Access to some databases is restricted under a license agreement to the UC faculty, staff, and students; telnet to melvyl.ucop.edu or any of four Internet addresses (31.1.0.1, 31.0.0.11, 31.0.0.13, 31.1.0.11). For more information, contact the University of California MELVYL Catalog, Division of Library Automation, University of California Office of the President, 300 Lakeside Drive, 8th floor, Oakland, CA 94612-3550; phone: (415) 987-0555 (MELVYL Catalog Helpline); e-mail: lynch@postgres.berkeley.edu.

#### **CARL**

CARL is a gateway to academic and public library online catalogs, as well as resources like UnCover and Magazine Index, the *Academic American Encyclopedia*, and *Internet Resource Guide*. Access to some items is limited; telnet to pac.carl.org or 192.54.81.128. For more information, contact Colorado Alliance of Research Libraries, 777 Grant, Suite 306, Denver, CO 80203-3580; phone: (303) 861-5319; e-mail: help@carl.org.

#### **North Carolina's bbs.oit.unc.edu**

Read USENET newsgroups, use LibTel, a scripted TELNET gateway to access both U.S. and international libraries plus such things as Data Research

Associates Library of Congress catalog, the Ham Radio Call Book, the National Science Foundation, the Weather Server, Webster's dictionary and thesaurus, and more. For more information, telnet to [bbs.oit.unc.edu](mailto:bbs.oit.unc.edu) or 152.2.22.80 to connect to the bulletin board system.

## Services

For information on American University's gateway to many interesting sites, telnet to [wugate.wustl.edu](mailto:wugate.wustl.edu) or 128.252.120.1 using the login services.

## NYSERView

Travel to the resources described in NYSERNet's *New User's Guide to Useful and Unique Resources on the Internet*. For more information, telnet to [nysernet.org](mailto:nysernet.org) or 192.77.173.2 to try these. The login is `nysrview`; password is `nysrview`.

## Liberty High

This is a pilot project linking secondary education students with college campuses. NYSERNet plans to expand this service to every campus in New York State. To try it out, telnet to [nysernet.org](mailto:nysernet.org) or 192.77.173.2 and log in as `librtyhi` with the same password.

## APPENDIX D

### NAVIGATING THE SEA OF 700,000 HOSTS

Recent estimates of host computers on the Internet have exceeded 700,000. Many of these hosts offer files, data, graphics, audio files, and more for transfer to local computers. The notion of sifting through these millions of files looking for one particular item gives even ALA lifetime members the shakes! Fortunately, various projects are underway that simplify this search process.

#### Archie

Peter Deutsch, of McGill's Computing Centre, describes the archie server concept, which allows users to ask a question once yet search many different hosts:

The archie service is a collection of resource discovery tools that together provide an electronic directory service for locating information in an Internet environment. Originally created to track the contents of anonymous FTP archive sites, the archie service is now being expanded to include a variety of other online directories and resource listings.

Currently, archie tracks the contents of over 800 anonymous FTP archive sites containing some 1,000,000 files throughout the Internet. Collectively, these files represent well over 50 gigabytes (50,000,000,000 bytes) of information, with additional information being added daily. Anonymous FTP archive sites offer software, data, and other information that can be copied and used without charge by anyone with connection to the Internet. . . . The archie server automatically updates the listing information from each site about once a month, ensuring users that the information they receive is reasonably timely, without imposing an undue load on the archive sites or network bandwidth. (Deutsch, *CERFnet News*, Nov.-Dec. 1991, vol. 3, no. 7)

For more information, contact UNIX Support Group, Computing Centre, McGill University, Room 200, Burnside Hall, 805 Sherbrooke Street West, Montreal, Quebec, Canada H3A 2K6; phone: (514) 398-3709; e-mail: peterd@cc.mcgill.ca. Some archie server sites to telnet to include archie.rutgers.edu or 128.6.18.15 (USA), archie.sura.net or 128.167.254.179 (USA), archie.mcgill.ca or 132.206.2.3 (Canada), archie.funet.fi or 128.214.6.100 (Finland/Mainland Europe), archie.au or 128.184.1.4 (Australia/New Zealand), archie.doc.ic.ac.uk or 146.169.3.7 (Great Britain/Ireland).

#### Gopher

A gopher (or go-fer) is a little furry creature who tunnels through the ground or someone who fetches necessary items from many locations. Telnet to consultant.micro.umn.edu or 134.84.133.255, log in as gopher, and enjoy having your very own gopher. Gopher includes fun and games, humor, libraries (including reference books such as *The New Hacker's Dictionary*, *Roget's 1911 Thesaurus*, and the *CIA World FactBook*), gateways to other U.S. and foreign Gophers, news, and gateways to other systems. There is also an archie server.



## WAIS

Wide Area Information Servers (WAIS—pronounced wayz) allows users to get information from a variety of hosts by means of an electronic “client.” This may be the new world order of automated librarianship. The client searches various WAIS servers around the globe. The user tells the client how relevant each hit is, and the client can be sent out on the same quest again and again to find new documents.

WAISStation is an easy to use Macintosh implementation of a WAIS client. It can be downloaded from [think.com](http://think.com) as well as a self-running MediaTracks demo of WAISStation in action.

WAIS developer Brewster Kahle also moderates a thoughtful WAIS newsletter and discussion group, often speculating about the future of libraries and librarians. For more information, contact Brewster Kahle, Project Leader, Wide Area Information Servers, Thinking Machines Corporation, 1010 El Camino Real, Menlo Park, CA 94025; phone: (415) 329-9300, ext. 228; e-mail: [brewster@think.com](mailto:brewster@think.com).

## WorldWideWeb

Tim Berners-Lee describes his Web this way:

The WWW project merges the techniques of information retrieval and hypertext to make an easy but powerful global information system. The WWW world consists of documents, and links. Indexes are special documents which, rather than being read, may be searched. The result of such a search is another (“virtual”) document containing links to the documents found. The Web contains documents in many formats. Those documents which are hypertext (real or virtual), contain links to other documents, or places within documents. All documents, whether real, virtual, or indexes, look similar to the reader and are contained within the same addressing scheme. To follow a link, a reader clicks with a mouse (or types in a number if he or she has no mouse). To search an index, a reader gives keywords (or other search criteria). These are the only operations necessary to access the entire world of data.

To get there, telnet to 128.141.201.74 or [info.cern.ch](http://info.cern.ch). For more information, contact Tim Berners-Lee, WorldWideWeb Project, 1211 Geneva 23 Switzerland; phone: +41(22)767 3755; fax: +41(22)767 7155; e-mail: [tbl@cernvax.cern.ch](mailto:tbl@cernvax.cern.ch).

## APPENDIX A

## WANT TO GET CONNECTED TO THE INTERNET?

To get connected to the Internet, we recommend talking to your regional network provider first since they may be able to provide libraries, schools, and nonprofits low-cost or subsidized connectivity. If you do not know who your regional is, contact the NSFNet people at 10 Moulton Street, Cambridge, MA 02138; phone: (617) 873-3400. There are many low-cost ways of exchanging global e-mail, including FidoNet and FrEdMail, which are not described here. A few other methods of connecting to the net, which include the ability to use TELNET and FTP, follow.

**CERFnet**

The California Education and Research Federation (CERFnet) offers DIAL N'CERF USA. It allows access to the Internet from anywhere in the continental United States. Users dial a toll-free number to log in to remote machines, transfer files, and send and receive e-mail. The cost is \$20 a month with a \$10-per-hour usage fee. There is an installation charge of \$50. For more information, contact CERFnet, California Education and Research Federation, c/o San Diego Supercomputer Center, P.O. Box 85608, San Diego, CA 92186-9784; e-mail: help@cerf.net; phone: (800) 876-CERF or (619) 534-5087.

**Performance Systems International (PSI)**

PSI offers several varieties of network connectivity, including e-mail-only accounts, e-mail and TELNET accounts, dial-up host connectivity on demand, and dedicated connections. Costs are competitive, and performance is reliable. PSILink, e-mail, and delayed FTP are \$19 a month for 2400-baud service or below, \$29 per month for 9600-baud service. GDS (Global Dial-up Service) includes TELNET and rlogins at \$39 a month, 2400-baud, 24-hour access. Host DCS (Dial-up Connection Service), at about \$2,000 per year, includes a full suite of Internet activities (mail, news, FTP, TELNET). PSI has POPs in over 40 U.S. cities. For more information, contact Performance Systems International, Inc., 11800 Sunrise Valley Dr., Suite 1100, Reston, VA 22091; phone: (800) 82PSI82 or (703) 620-6651; fax: (703) 620-4586; e-mail: info@psi.com. Entering all-info@psi.com generates an automatic response containing summaries of various PSI products.

**The World**

Software Tool & Die runs a public access UNIX system called The World. Basic rates are \$2 per hour and a \$5 monthly account fee. Services offered by The World include Internet e-mail, USENET news, ClariNet (UPI, AP, and satellite news services), real-time chat, UNIX Software, archie, the Online Book Initiative (a publicly accessible repository for freely redistributable collections of textual information—a net-worker's library). The World can also be accessed over the CompuServe Packet Network. You do not have to be a CompuServe subscriber to use this network, but you will be billed for its use.

## APPENDIX E

## MUST-HAVE VOLUMES FOR THE INTERNET SURFER

- Kehoe, Brendan P. (1993). *Zen and the art of the Internet: A beginner's guide* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall. The first edition is available for free from many FTP sites. This version has about 30 pages of new material and corrects various minor errors in the first edition. Includes the story of the Coke Machine on the Internet. For much of late 1991 and the first half of 1992, this was the document of choice for learning about the Internet. ISBN 0-13-010778-6. Index. \$22.00.
- Krol, Ed. (1992). *The whole Internet user's guide & catalog*. Sebastopol, CA: O'Reilly & Associates. Comprehensive guide to how the network works, the domain name system, acceptable use, security, and other issues. Chapters on telnet/remote login, File Transfer Protocol, and electronic mail explain error messages, special situations, and other arcana. Archie, Gopher, NetNews, WAIS, WWW, and troubleshooting each enjoy a chapter in this well-written book. Appendices contain information on how to get connected in addition to a glossary. ISBN 1-56592-025-2. \$24.95.
- LaQuey, Tracy, & Ryer, Jeanne C. (1993). *The Internet companion: A beginner's guide to global networking*. Reading, MA: Addison-Wesley. Beginning with a foreword by Vice-President Elect Al Gore, this book provides an often-humorous explanation of the origins of the Internet, acceptable use, basics of electronic mail, netiquette, online resources, transferring information, and finding e-mail addresses. The In the Know guide provides background on Internet legends (Elvis sightings is one), organizations, security issues, and how to get connected. Bibliography. Index. ISBN 0-201-62224-6. \$10.95.
- Tennant, Roy; Ober, John; & Lipow, Anne G. (1993). *Crossing the Internet threshold: An instructional handbook*. Berkeley, CA: Library Solutions Press. A cookbook to run your own Internet training sessions. Real-world examples. Foreword by Cliff Lynch. Library Solutions Institute and Press; 2137 Oregon Street, Berkeley, CA 94705; phone (510) 841-2636; fax: (510) 841-2926; ISBN 1-882208-01-3. \$45.00.